ZXAppeal

Jan. '86 Newsletter of the # 1.5C

VANCOUVER SINCLAIR USERS GROUP

Next Meeting

Killarny Community Centre
6260 Killarny st. Vanc.

Jan. 10 7 PM

In this issue:

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the club and ZXAppeal see the backcover. In order to 'beat the deadline' material for ZXAppeal may be send directly to the editor
2308 Marine Drive
West Vancouver. B.C.
V7V 1K8.
Marcio Vieira 'the Pres.'
can be reached at 984-8893

The year of the Sinclair Computer

EDITORS PREAMBLE.

Like `uh, have an awesome new year, you know?
This is 1986 the year of Expo, the year of Skytrain, the year of..gasp.. Enigma??
In case you do not know what the first two things mean don't worry your not from around here. If you haven't heard of the Enigma it's OK too, neither had I up to a few days ago.
Enigma it turns out is Sir Clive,s answer to the 520ST and the Amiga, details are sketchy at this time (see Bob Lussiers column) but some people around here have already made up their mind to call this elusive computer the "Enema" if it turns out that Sir Clive is unable to Ahem..push it through.

Anyway the last meeting was again well attended. Mr.V. opened the proceedings at around 7.15 PM and he wanted us to be sure and have a merry Christmas. I hope you all did.
We also had 3 BERTs visiting us and they are growing up. (BERT is the robot built by some of our members who took Karl Brown,s Robotics course.) All 3 BERTs where taking their instructions from a ZX81, not bad for a 30 buck computer.

Harry Slot was wondering whether the dues increase, decided on last meeting, was possibly a tat to much. A discussion ensued. Again let me explain. All the money raised through dues ,ads in ZXAppeal and sales of PC boards etc. are used for printing and mailing the newsletter.
Yes we do send other user groups around Canada and the US a copy of ZXAppeal but so do they.
To us.
Send their newsletter that is.
I don't think we should isolate ourselves from the rest of the Sinclair community.

Expect a compilation of " the best of the other guys newsletters" soon.
I guess in the final analysis it comes down to whether you think you are getting your moneys worth out of the club.

Harry also mentioned that the J.I.L. data recorders are out of production. If you promised yourself one, hoof it down to the nearest Consumers Distributors and, if they are out of stock, badger the manager until he gets one because there are still some available in the Richmond warehouse of the distributor.

He' we have a librarian. Yes indeed some kindhearted soul, who,s name sadly escapes me for the moment, has decided to take on the task of overseeing the Vancouver Sinclair Users Group Library. Ofcourse at the moment the library does not contain a hell of a lot but that will change now that we have someone to look after it.
The finer points of running the library have not been settled yet but if you have some good, public domain, software laying about bring it in to the next meeting. We will discuss the details of this venture at that time, problems with copy rights etc. will have to be looked at.

I had a sneak preview of Wilf Rigters Hi-Res set up, see his article on page 13. This is good stuff, this thing works, together with Marcio Vieira,s memory upgrade (ZXAppeal Dec.85) you can have a computer with real bitmapped graphics capability. By the way, the article on page 13 is number one in a series, more have been promised for the future.

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THE ZEEPER SPEAKS...

Greetings. Once again the Zeeper has decided to visit the psycho ward of the computer world. you guys really keep me busy. I just finished zapping Sir Clive in England when this catalogue shows up from ZEBRA SYSTEMS. It appears the Portugese are into the act now. They decided to give you weirdos a fully intergrated disk drive system for the 2068! I couldn't believe it. This thing even has Timex styling and acts like a real disk drive...almost.

The Zebra disk drive uses 3" disks. Now for the uninitiated among you, the entire planet uses 5" disks. The Disk Operating System (DOS to the rest of the world) is the usual Timex brand of weirdness. what does this mean, you kiddies ask? Firstly, 5" disks cost about $1.00 each whereas the 3" disks cost about $4.00 each, when you can get them, in lots of 10. Secondly, the single most popular aspect of the Z-80 chip is CP/M access. To further educate you lowly T/S owners, CP/M is only the largest public domain (free) software base in the world. Even if someone designed a CP/M system for the 2068 (which is quite possible), 5" disks would still be needed to run it. Smart move Portugal---the Zeeper loves ya.

Now about the Spectrum 128, I know it is supposed to combine all the features of the Spectrum+ and the 2068, as well as have a decent keyboard, but fellas, think for a minute. Has old "Sir Clive" ever been known to make a computer that didn't need the after market to turn it into a REAL computer. OH YEAH---what about the ZX80,81, Spectrum, Spectrum+, GL ? Have any of them a decent keyboard? What about the "usual" delivery time...4E4. Then of ccarse the Sinclair "oversights" ...rampack wobble, poor screen display, overheating, no on/off switch (my favourite), incompatibility with the whole world, weird screen widths, bizarre mass storage mediums (a 68000 computer using magnetic tape...come on), funny boxes and all kinds of wires hanging all over.

The Zeeper will make a prediction and a challenge right now to Sir Clive Sinclair. Sinclair Research does not have the wherewithall to deliver to the North American market an inexpensive computer that can equal the Amstrad in quality and performance. I challenge Sinclair Research to bring out a computer that doesn't need the after-market to turn it into a "real computer". If they can do that and are able to deliver it within 30 days of ordering, not only will I buy it, I will climb to the top of Little Mountain and shout praises to Sir Clive in my underwear. ENIGMA?---never heard of it."

ROLL YOUR OWN.
Space Invaders

'Tis time to present an other short but sweet machine language program for the ZX81.
I call it "Roll your own, -space invaders-" because it gives you the ability to program your own version of this classic, in BASIC, using machine language routines to really speed things up. The machine language program listed here does 4 things.

1) It scans the keyboard and it

2) fires rounds of ammo, it then moves those rounds up to the top of the screen. It also moves the gun left and right, all depending on the keys pressed.

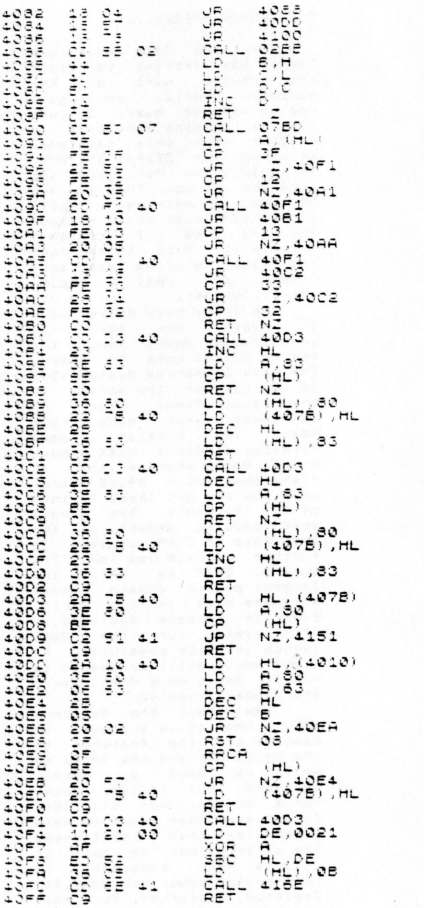
3) It moves everything put anywhere on the screen above line 22 down, one line at a time. Everything except the bullets that is.

4) And finally if anything on the screen is moved from line 21 to line 22 the game is over and you get a BOOM.

What does all this mean?
Simple, it means that a short BASIC program (see example) can, in SLOW mode, present you with a ripsnorting game of space invaders and the beauty is YOU control everything.

What do you control? Well, the number of invaders for instance and what they look like. Also the speed with which the invaders come down the screen compared to how fast you can move the gun and fire it.
You can even move the gun to a random location on the bottom line, during the game, to make things more interesting
Shall we get down to business?

*



Cont. next page

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The BASIC Sample program.

I guess the first thing to discuss is how to get the machine program in your machine. I am going to be short and sweet about this, you have about 260 bytes to enter in the number 1 REM statement so your first order of business is to set up a 260 byte REM statement.
As to how to go about entering the bytes I am going to assume by now you have some sort of a HEX POKE program laying around somewhere. If not have a look in the MARCH '85 ZXAppeal (the centronics article) or else you could use the method used in "Beethoven", in the November issue.

The program comes with 3 routines CALLable from BASIC, via the vectors at the top of the listing.
For those of you not into "vectors", don't worry, all it means is that, when you RAND USR xxx, you use an address different from where the actual routine lives.
For those of you who know, yes my vectors are set up kind`o weird, it's what happens when you "hack" instead of program.

Let's look at the routines one by one.
RAND USR 16516 locates the gun and puts its address in the famous spare bytes at 16512. This gives you the opportunity to place the gun (Char.80h or graphic space) any where on line 22, even DURING the game. Just make sure you call this routine every time you move the gun with a BASIC routine and at least once at the beginning of the game.

Cont. Page 12

```
1000 SLOW
1005 POKE 16418,0
1010 PRINT AT 22,0;"                                "
1015 PRINT AT 22,25*RND;"▀"
1020 RAND USR 16515
1030 FOR F=1 TO 30
1055 RAND USR 16514
1057 RAND USR 16514
1063 PRINT AT 0,25*RND;" ▒ "
1065 RAND USR 16514
1067 RAND USR 16514
1070 RAND USR 16513
1075 NEXT F
2000 GOTO 1010
```

```
4100  AF          XOR  A
4101  32 21 40    LD   (4021),A
4104  21 10 40    LD   HL,(4010)
4107  11 42 00    LD   DE,0042
410A  ED 52       SBC  HL,DE
410C  11 21 00    LD   DE,0021
410F  CD 25 41    CALL 4125
4112  E5          PUSH HL
4113  21 21 40    LD   HL,4021
4116  CB 4E       BIT  1,(HL)
4118  E1          POP  HL
4119  20 36       JR   NZ,4151
411B  06 15       LD   B,15
411D  C5          PUSH BC
411E  CD 25 41    CALL 4125
4121  C1          POP  BC
4122  10 F9       DJNZ 411D
4124  C9          RET
4125  06 20       LD   B,20
4127  2B          DEC  HL
4128  AF          XOR  A
4129  2B          DEC  HL
412A  BE          CP   (HL)
412B  28 21       JR   Z,414E
412D  3E 08       LD   A,08
412F  BE          CP   (HL)
4130  28 1C       JR   Z,414E
4132  7E          LD   A,(HL)
4133  19          ADD  HL,DE
4134  F5          PUSH AF
4135  3E 08       LD   A,08
4137  BE          CP   (HL)
4138  20 07       JR   NZ,4141
413A  AF          XOR  A
413B  ED 52       SBC  HL,DE
413D  77          LD   (HL),A
413E  F1          POP  AF
413F  18 0D       JR   414E
4141  F1          POP  AF
4142  77          LD   (HL),A
4143  AF          XOR  A
4144  ED 52       SBC  HL,DE
4146  77          LD   (HL),A
4147  E5          PUSH HL
4148  21 21 40    LD   HL,4021
414B  CB CE       SET  1,(HL)
414D  E1          POP  HL
414E  10 D8       DJNZ 4128
4150  C9          RET
4151  CD 2A 0A    CALL 0A2A
4154  2A 0C 40    LD   HL,(400C)
4157  11 5B 01    LD   DE,015B
415A  19          ADD  HL,DE
415B  36 A7       LD   (HL),A7
415D  23          INC  HL
415E  36 84       LD   (HL),84
4160  23          INC  HL
4161  36 84       LD   (HL),84
4163  23          INC  HL
4164  36 82       LD   (HL),82
4166  E1          POP  HL
4167  CD 46 0F    CALL 0F46
416A  38 FB       JR   C,4167
416C  08          EX   AF,AF'
416D  FF          RST  38
416E  06 15       LD   B,15
4170  AF          XOR  A
4171  ED 52       SBC  HL,DE
4173  BE          CP   (HL)
4174  28 04       JR   Z,417A
4176  77          LD   (HL),A
4177  19          ADD  HL,DE
4178  C9          RET
417A  36 08       LD   (HL),08
417C  19          ADD  HL,DE
417D  77          LD   (HL),A
417E  AF          XOR  A
417F  ED 52       SBC  HL,DE
4181  10 ED       DJNZ 4170
4183  C9          RET
```

Paul R

```
*               SIEVE OF ERASTOSTHENES
*                    IN ASSSEMBLER
*                  SEPT 27/85
*
                GET     'flp2_STANDARD_HDR3'
SIZE            EQU     8192
ITER            EQU     100
*
START           LEA     SCR_PAR,A1              * point A1 to screen parameters
                VECTOR  UT_SCR,A2               * macro
                BNE     ERROR
                LEA     SCR_CHAN(PC),A1
                MOVE.L  A0,(A1)                 * Save the screen channel #

                MOVE.L  A0,A4                   * A4 = SCR_CHAN
                MOVEQ   #0,D1
                QDOS_N  MT_SCLCK,1              * set clock to 0
                BSR     RD_TIME                 * using the qdos macro
                MOVE.L  #SIZE,D1                * '_N' indicates no error testing

                MOVEQ   #-1,D2
                QDOS    MT_ALCHP,1              * allocate space on common heap
                BNE     ERROR
                MOVE.L  A0,A5                   * A5 = BASE ADDR
                MOVE.L  #ITER,D5                * D5 = # OF ITERATIONS

I_LOOP          MOVE.L  A5,A0                   * A0 = BASE ADDR
                MOVE.L  #SIZE,D3
                MOVE.B  #01,D1
ARRAY           MOVE.B  D1,(A0)+                * initialize array to 1's
                DBRA    D3,ARRAY
                MOVE.L  #0,D0                   * D0=INDEX
                MOVEQ   #0,D1                   * D1=K, ANOTHER INDEX
                MOVEQ   #0,D2                   * D2=COUNT
                MOVEQ   #0,D3                   * D3=PRIME
F_LOOP          TST.B   0(A5,D0)
                BEQ     NEXTI
                MOVE.L  D0,D3
                ADD.L   D3,D3
                ADDQ.1  #3,D3                   * PRIME=i+i+3
                MOVE.L  D3,D1
                ADD.L   D0,D1                   * K=i + PRIME  : D1=D0 + D3
WHILE           CMPI.L  #SIZE,D1
                BHI     INCOUNT
                CLR.B   0(A5,D1)
                ADD.L   D3,D1
                BRA     WHILE
INCOUNT         ADDQ    #1,D2           *  COUNT +1

NEXTI           ADDQ    #1,D0           * INDEX +1
                CMPI.L  #SIZE,D0
                BLS     F_LOOP
                DBRA    D5,I_LOOP
                MOVE.L  D2,-(A7)
                BSR     SND_MSG2
                MOVE.L  (A7)+,D1
                MOVE.L  A4,A0           * CHAN ID
                VECTOR  UT_MINT,A2      * print the integer in D1.W
                BNE     ERROR
                BSR     NEWLINE
                BSR     RD_TIME
                BRA     EXIT

ERROR           VECTOR  UT_ERR0,A2      * PRINT QDOS ERROR MSG TO CONSOLE
*
EXIT            LEA     SCR_CHAN(PC),A1
                MOVE.L  (A1),A0
                QDOS_N  IO_CLOSE,2
                MOVEQ   #0,D0           * RETURN TO BASIC WITH NO ERROR FLAG
                RTS
```

PLAYING WITH ELECTRICITY #(x)..(Harvey Taylor)

Well I finally got my printer . You will just have to put up with my messing around with different typestyles. Between Quill and the LX80, there are a lot of different combinations to try.

In the last column I managed to get to Paul before the deadline (sigh), I posted some results ofthe Sieve of Eratosthenes in Superbasic and 68000 Assembler. Now that I have my printer, I can get the code on paper & so here it is. Any of you who may be experienced 68K hackers may see ways to optimize the code. The 'GET FLP2_standard_hdr3' line at the beginning is an instruction to the assembler to get the file which contains all the QDOS system calls & values. (Well most anyway, I'm adding them as I use them & there are 150+ QDOS calls documented.)

By the way, that reminds me. Anybody who is going to get into some serious programming will find ADRIAN DICKENS "QL ADVANCED USERS GUIDE" invaluable . There is also available from Boston Sinclair, The QL Technical Guide , (US$20.00 + shipping) which has some additional information.

Also by the way, If this article should happen to fall into the hands of any other QL owner, drop me a line. I'm trying to maintain contact with as many QL'ers as possible.

Back to the listing, as you see, most of the nonessential code consists of system calls (via QDOS,QDOS_N,VECTOR,&VECTOR N). This makes it easy to do the simple sorts of housekeeping things that always need to be taken care of .....BUT, IT MEANS YOU GOTTA DO IT THEIR WAY. WHICH IS OKAY IF 'THEY' HAPPEN TO BE GOING YOUR WAY, (EXCEPT HOW OFTEN DOES THAT HAPPEN?)

THERE is a direct correlation between the assembler listings and the basic code of last time which will give you an idea what the code is about, label by label. GET IN TOUCH WITH ME IF YOU HAVE QUESTIONS.

```
RD_TIME         QDOS_N  MT_RCLCK,1
                LEA     BUF_TOP(PC),A1
                SUBA.L  A6,A6           * zero A6 for CN_DATE
                VECT_N  CN_DATE,A2
                MOVE.W  (A1)+,D2
                MOVEQ   #-1,D3
                LEA     SCR_CHAN(PC),A0
                MOVE.L  (A0),A0
                QDOS    IO_SSTRG,3
                BNE     ERROR
NEWLINE         MOVEQ   #-1,D3
                QDOS    SD_NL,3
                RTS
SND_MSG2        LEA     MSG2(PC),A1
SENDIT          LEA     SCR_CHAN(PC),A0 * RETRIEVE CHANNEL #
                MOVE.L  (A0),A0
                VECTOR  UT_MTEXT,A2
                RTS
*
MSG2            DC.W    M2END-M2
M2              DC.B    ' COUNT= '
M2END
*
MSG1            DC.W    M1END-M1
M1              DC.B    'SIEVE OF ERATOSTHENES',10
M1END
```

```
SCR_CHAN        DS.L    1
SCR_PAR         DC.W    $0401
                DC.W    $0004
                DC.W    384
                DC.W    128
                DC.W    64
                DC.W    32

BUFFER          DS.L    30
BUF_TOP
ADDR            DC.W    00
CON_BUFR        DS.L    2
STACK           DS.L    4
STK_TOP

                END
```

ZXTRAS
previously: Colour Corner
written by: W M Cartny
appearing: January edition

So the Zeeper got our good friend Daryll I see. He could have avoided that misfortune by having a LED light installed on his 2068 that indicated that the power was on. Consider doing the same, you may avoid meeting up with the Zeeper.

*** ARCHON: Spectrum 48K, Sp. +

Thank you Electronic Arts, at last you have presented us with the game that has changed the way people play stratigic games. If have not played Archon on any of the , ahem, other computers yet, try it on them if you do not have a Spectrum. You wont find much difference.

You are positioned on a chess board, the light vs. the dark, and you choose an icon and the computer does the same. They are moved into position to do battle on a different screen, each battle is quite a challenge. The graphies are , how would I put it? I guess you would call them, different. Very addictive, an overall good game.

Ratings:	Graphics	££££
	Addictive	£££££
	overall	££££

address

Goodbyte(zx),
94, Leatner lane,
London Ec1

Archon ... £7.50

BEATING ARCHON: 11 HELPFUL TIPS

1. If you want to learn the game quickly, play the computer not an opponent.

2. Learn to shoot diagonally, it increases the firing range.

3. Play aggressively and plan your attack.

4. Learn the characteristics of each icon.

5. Icons with slow shots should close in on their opponents.

6. Icons with quick shots should stay away from their opponents.

7. Time your attacks and counters keep moving.

8. Use barriers. Race around them to put distance between you and the pursuing icon.

9. Keep your icons spread out so they can be in position to attack.

10. Move your icons onto squares of favourable colour as quick as you can. Teleport one of your heavyweights onto the opponents icon so it cannot move off of an unfavourable square.

11. Move strong icons close to power points and wait until the luminosity cycle is in your favour, then try to take th m.

REVIEW: SPECTRUM 128K

by R. Lussier

The 128K's code name Derby has been launched in Spain and will be available in the Spring in Britain.

Essentially two computers in one. When turned on the 128K mode is on automatically, but type SPECTRUM and it becomes a 48K Spectrum Plus, completely compatible with all the existing Spectrum Software. The UK model will sell for about £150.

The 128K looks like a Plus with a big heat sink bolted on the righthand side, and seperate Keypad attached to the computer by a coil-cord into the front of the Spectrum.

A full range of ports have been included. There is an RS232 socket, MIDI Sockets for musical instrument hook-up, reset switch RGB/Composite socket, TV socket the tape leads on the left hand side, and the edge connector in the usual place. A Sound-Chip as on the TS 2068, Sound through a TV speaker & adjustable.

In the 128K mode the Key-word system is not used. They are entered one letter at a time but retained in the 48K mode. The 128 has the capacity to act as a RAM disk. That's a facility whereby areas of RAM can be set aside to store a suite of pro-grams or sets of data in much the same way as on Microdrives. Access to files on RAM disk is almost as instantaneous. As an example the command 'CAT' pro-duces an instant catalog of RAM files. There is still no sign of a Joystick port.

There may be a few changes before it appears on the British market scene. It looks to be a strong base model for the new Sinclair range including the new portable PANDORA and the desktop ENIGMA.

The new Spanish version of the Spectrum 128K computer now available.

The price for this new com-puter is U.S. $270.00 including postage & Insurance. It is now available from:-

The EMC,
15 Kilburn Court,
Newport, RI 02840
U.S.A.

INTERNATIONAL USER'S

by R. Lussier

These are addresses of some Sinclair User's wishing to con-tact other User's Worldwide. If interested please don't hesitate to contact them.

ZX81 CLUB

Lain Dale,
78 Cobden St.,
Thornaby,
Stockton on Trees,
Cleveland TS17 7ET,
England

Strathclyde Club

Ian Kennedy,
24 Waverly Crescent,
Lanark, Scotland

SPANISH CLUB

Jose Manual Martin Sautos,
Spdo 635, Castellon,
Spain

PENPALS

G. Bentham,
PO Box 73,
Ngodwana,
N.E. Transvaal,
Rep. S. Africa 1209

Pajard Jerome,
57 Rue Segoffin,
92400 Camberoie,
France

Owen O'Connor,
Downings North,
Prosperous,
Co. Kildare, Ireland

2068 KEYBOARD OVERLAYS

by R. Lussier

There is a company which has plastic keyboard overlays for the 2068 called "QUICKEY 2068".

The different overlays are:
(1)"TASWORD II/TASPRINT"
(2)"MSCRIPT"
(3)"BLANK"

The price is U.S.$3.99 for the first two and $3.00 for the Blank. These give you commands at your fingertips. A very useful product. Any two for $7.50+ 50 cents postage. These are now available from:

AN-TO Products,
9009 W. Elm St., #2,
Phoenix, AZ 85037
U.S.A.

2068 PRODUCT GUIDE

by R. Lussier

(1)The WAFADRIVE system with the RAINBOW emulator plus Spectrum Bus interface priced at U.S. $175 + $5 Post from the Damco Co., 67 Bradley Ct., Fall River, MA 02720

(2)A new Canadian co. has 2 new software titles called "CHARACTER FONT GENERATOR" at $25 and "ADVANCED VIDEO MODES", a utility that uses the 2068's Dual Screen and the Extended Color and 64 Column modes at $15 (Canadian). From Beaver Computer Prod., 999 Munroe Ave., Winnipeg, Man. R2K 1J4

(3)T/S Connections, 3832 Watterson Ave., Cincinnati, Ohio 45227, U.S.A. have a Stereo Jack for the 2068, LED Power Indicator and a Power supply switch for the T/S 2040 printer. They also repair Timex computers. Write for more information.

(4)A program called "Greeting Card Designer" which is like ATARI's "Print Shop" and is priced at U.S. $20 from Zebra Systems, 78-06 Jamaica Ave., Woodhaven, NY 11421.

(5)T/S 2040 printers for sale at U.S. $38.88 from BNF Enterprises, 119 Foster Street, PO Box 3357, Peabody, MA 01961

REVIEW: Spectrum Software

by R. Lussier

The Way of the Exploding Fist

This is a Karate simulation game and is controlled by the keyboard or joystick.

The program starts of with a DEMO mode and you can enter the real program at a press of a key. You have 18 different moves, such as Flying Kick, High Kick, Mid Kick, Short Jab kick, Sweeps, Roundhouse, High Back kick, Punches, Jab & Low, Forward & Backward Somersaults.

The graphics are very well done including the shadows done ZAXXON style and the animation is very smooth. There are different screens of action and is one of the best Sporting type programs I have seen. There is also a 1 or 2 player mode.

GRAPHICS: 95%
MONEY VALUE: 90%
EASE of USE: 90%
OVERALL: 91.5%
PRICE: £8.00 inc Post

Bargain Software,
Unit 1,
1 Esmond Road,
London W4 1JG,
England

REVIEW: Sinclair ENIGMA

by R. Lussier

The ENIGMA will be Sinclair first Mega-machine. Sinclair believes that 1 Megabyte RAM is a minimum needed to compete with the Atari's ST and the Commodore AMIGA.

The ENIGMA will also have two 3.5 inch Disk Drives. It is planned for launch in May, 1986 between £500-£1000 price range. The programs Quill, Abacus, Archive, & Easel will be on ROM. It will also have full Window, Icon, Mouse environment as well as GEM used on the Apricot computer. The ENIGMA will be sold as a complete package. This will include computer, software, two drives, Mouse, Color Monitor and Printer. It may also develop the addition of Phone and Communications work station.

NEW SPECTRUM MAGAZINE

by R. Lussier

The magazine is called the "YOUR SPECTRUM". This magazine is along the same lines as the Sinclair User magazine.

The magazine has news about the Sinclair line of computers & program reviews plus Listings for the Spectrum. One nice feature is that you can obtain the listings on tape rather than you typing them in (not so with the other magazines). These are available at £3.99 inc Post. This alone could prove very useful. The price of the magazine for 12 issues (monthly) is at £25.00. Available from:-

Your Spectrum,
14 Rathbone Place,
London W1P 1DE,
England

BEWARE! BEWARE! Dept.

by R. Lussier

Some companies give poor service when you order products from them. One such company I am now dealing with is the company called:- Games To Learn By in Collinsville, CT, U.S.A.

I ordered a program from them last Sept./85 and to this date Dec. 11/85 still have not received it.

I phoned about 1½ months ago & was told they would then contact me back in a few days,no reply was received. I have phone back over a dozen times & only got an answering machine. On the 11th of Dec./85 I finally got in touch with them.

A woman answered very nastily stating that only two were taking care of the company and that there were other poblems that they were having. I was put back by the way she handled this I just about hung-up the phone. She said they would send me my money back.

This is no way to run business. This type of business venture should not be put up with as it gives the rest of the mail order dealers a bad reputation. As we Users have to rely mainly on mail-order houses they should at least strive to give service if they want repeat business.

Of the last three orders I have sent to the dealers in the U.S. only one came through and that took 2½ months & quite few phone calls as follow ups.

I find that the British dealers are much better. Usually you get your orders within one month. They usually also follow up on their orders. This is how repeat business is built.

From Page 5

The routine at USR 16518 moves every character it finds on the screen above line 22 down one line. It ignores the bullets (Char. 11h or " quotation mark) and when it moves something from line 21 to line 22 it automatically ends the game by going into the "BOOM" routine. If and when the dreaded "BOOM" routine catches up with you the only way out is via the BREAK key.

When you RAND USR 16514 the keyboard is scanned. if no key is pressed the routine returns without any action. Pressing keys, while the keyboard is being scanned, will initiate the following actions.
N moves the gun left and
M moves it right.
Z fires the gun when it is stationary and
shifted N or M fires the gun while it moves.

It must be clear to everybody that the ratio of KBscans to screen moves makes the game more or less difficult. In the sample game the ratio is 4 KBscans to one screen move. Also my aliens all start on line 0 (you could start them anywhere). To keep things interesting I RNDomize the gun placement each time the loop at line 1030 finishes.

I realize some questions may have slipped by me, if so mea culpa and come to the next meet to ask them.

Paul R

All the best for '96

From Page 2

We have had a request for repair people, some of us "Sinclair users" are electronic wizards but others, in the club, don't know their AC from a hole in the ground. It would be nice if we could match the latter with the former, if the latter has something that needs fixing, computerwise that is.
If any of you technicians out there don't mind helping out your "fellow member with the smoking computer" identify yourself at the next meeting please. By the way, Dave Ross can usually get replacements for most of the smokeprone components inside your computer.

As you can see this issue of ZXAppeal has it all, ZX stuff 2068 stuff and now QL stuff as well. Only with lots of contributors can I put together an interesting issue so..keep up the good work guys.

Paul (the Editor) Ruiterman.

INTRODUCING THE WRX16 HIRES SYSTEM

by W Rigter

Hot on the heels of TADA Software Hires, we present our own brew of Bit Mapped Hires.

With minimal hardware additions, in some cases none, you can possess the elements of a full-featured graphics subsystem. Check the features provided by WRX16 HIRES:

1) 256X192 pixel resolution
2) Plot, unplot, complement pixels
3) Draw lines
4) Sprites
5) Shapes
6) Mixed text and graphics
7) Expanded display, ie 25 rows
8) Upper and lower case
9) Smooth scrolling
10) Two horizontal scrolling options: "wraparound" or windowing a larger graphics plane

Suddenly the door is open to all the projects we have so far only dreamed about; 40+ columns, "what you see is what you get" word processing, CAD and $100 MAC-alikes.

The key to the system is a succinct 76-byte algorithm which utilizes the built-in display and memory refresh facilities in a novel way. This routine creates a HIRES screen which can be "poked", scrolled, inverted or blanked out with all the ease of a true bit-mapped display.

Too good to be true? Let us see how simple it is to implement and what little hardware we need to get started.

ACTIVATING THE HIRES DISPLAY

Entry from the Sinclair Operating System (SINC O/S) is made by first calling "HIRES", a short routine located at 41E9H. There, the IX register is loaded with a jump vector pointing to "DPLY", the entry point located at 41FDH.

When the SINC O/S next encounters the JP (IX) instruction, program control is transferred to the HIRES routine instead of the normal one residing in ROM. This occurs 50 times a second during the NMI service routine.

HIRES MAIN DISPLAY LOOP

Part 1 of the HIRES routine initiates the main display loop. The maskable interrupt is disabled, the HIRES screen is centered, its vertical and horizontal size is set and a pointer is loaded with the start address of a 6K memory block reserved for the HIRES screen.

Part 2 and 3 make up the main display loop. Timing is critical because the routine must trigger the ULA at precise intervals so that it, in turn, will produce line synchronization signals at appropriate intervals. Including dummy instructions for fine tuning, it occupies ___ T-states.

Part 2 keeps track of how many lines are left to do and if the display has been completed, a jump is made to Part 4, the exit routine. Otherwise, various registers are updated. The line start pointer is incremented by 32 and the line count register is decremented by 1. Finally, the start address of the next display line is loaded into the I and R registers.

In Part 3, a jump is made to a 32 character dummy display file, L3UF. There, the display facilities of the ULA are triggered and utilized as explained below. Refer to "The Explorer's Guide ..." for background on how the ULA operates.

1) The ULA is triggered into the display mode whenever address line A15 is high during an instruction fetch (M1) cycle. The HIRES software achieves this by way of a jump vector pointing to C28CH, the high memory phantom of L3UF. This method is similar to the one used in the SYNC O/S display routine.

2) On being triggered, the hardware swings into action. It generates a line sync pulse and on each M1 cycle, pulls the data lines low. The microprocessor 'sees' the 00H NOP code so for 4 T-states does nothing except feed the R and I register contents onto the address lines during the refresh cycle. It then increments the R register and fetches the next dummy instruction. This process is repeated to the end of L3UF, where a jump instruction transfers control back to Part 2, completing the loop. This jump is made to its true address, so line A15 will no longer go high, temporarily suspending the ULA's display activities. This process is repeated until all lines have been displayed.

3) When in the display mode, the ULA forces levels onto the address lines which normally address font tables residing in ROM. Since the HIRES screen is mapped elsewhere in RAM, this action has no effect.

Instead, with the contents of the I and R registers applied to the address lines, memory locations in the HIRES file are accessed and their contents applied to the data bus.

4) During the refresh cycle, the ULA loads these bytes into an internal register. From there they are sent serially to the modulator for display.

5) During the M1 cycle, the ULA monitors data line D7 and if high, inverts the video data. For a normal display, characters of the dummy display file are set to 00H. When set to 80H, they serve to invert the display column by column.

As mentioned above, Part 4 of the routine is to return to the SYNC O/S after completing some housekeeping chores.

To restore the normal display facilities, "NORM", a short routine located at 41E0H, is called. There, the IX register is loaded with a jump vector pointing to the ROM-based SYNC O/S routine.

HIRES DEMONSTRATION SOFTWARE

User-accessed software routines are presently available for demonstration purposes only. When ready for release, we intend to offer details to the club for publication.

The above software, modified to operate on an unexpanded stock machine, should also be available. Here, the intention is to demonstrate the principle more than to demonstrate the full potential of the system.

Meanwhile, the annotated listing which follows the text, combined with the above discription, should give sufficient detail on how the WRX16 HIRES system works.

HARDWARE REQUIREMENTS

The hardware additions required to implement a WRX16 HIRES system capable of a full-screen display are minimal, and future installments of this article will be based on such a system.

The microprocessor unit (MPU) must be able to activate all 8 low address lines during the refresh cycle instead of the conventional 7, and 8K of static RAM is required to store the HIRES display file.

Although some TS 1000's have been supplied with a suitable MPU installed, most of the ones we have encountered have not. Suitable MPU's are, however, readily available at low cost.

The 8K RAM has been mapped in the 8K-16K address space for simplicity and convenience. It can, along with the required decoding, either be wired inside the unit or mounted on an external board. Several magazine articles have been written to cover both options.

And that's it. Nothing more is required.

In fact, the principles of the system can be demonstrated with a completely stock, unexpanded machine, albeit with reduced display size, minimal user friendliness and some fiddling with the software.

UPDATING YOUR SYSTEM TO WRX16 HIRES

By press time, two starter-kit options will be available through D. ROSS EDUCATIONAL ELECTRONICS. The first, dubbed RESPAK 1, will include a demonstration tape, a complete description, a replacement MPU, an 8K static RAM IC, decoding and miscellaneous parts. Internal mounting detail will be left up to the experimenter.

RESPAK 2 includes an expansion board for mounting the RAM. This option is recommended as it requires no modification to the TS 1000's board.

Dave Ross has been involved with the developement from the start and intends to stock the required kits and later, to stock assembled units. All orders and requests for information should go through him. Leave a message on his machine at (604) 298 9245.

FUTURE DEVELOPEMENTS

We believe that the WRX16 HIRES system removes the final obstacle to a more widespread acceptance of the TS 1000. Dave, Jim Horne and myself are committed to develope this to the full and will continue to work on user software and hardware enhancements.

I would also like to acknowledge the assistance of Ray Lanoville in preparing this article from my field notes. Ray is interested in the educational potential of the TS 1000 and will be contributing to the team effort in that area.

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WRX16 RESPAK SOFTWARE - ASSEMBLY LANGUAGE LISTING

HIRES DUMMY DISPLAY FILE

```
408C ED4F      LBUF  LD R,A       ;REFRESH COUNTER LSB
     0000000000000 )              ;COLLAPSED DFILE
     0000000000000 ) 32           ;EXECUTED EACH
     0000000000000 ) NOP'S        ;HLINE, CONTROLS
     0000000000000 )              ;32 COLUMNS
     0000000000000 )              ;NORM   = 00
     0000          )              ;INVERT = 80
     C30D41                JP DP1 ;JMP TO DISPLAY LOOP

40B1                       SCNAD =2600 ;HIRES SCRN LOCN
```

HIRES PART 1

```
40FD F3        DPLY  DI           ;DISABLE INTERUPT
     0607              LD B,7      ;HORIZ SYNC DELAY TO
4100 10FE      DP0   DJNZ DP0     ;CENTER SCREEN
     06B0              LD B,B0     ;SET HIRES SCRN SIZE
     112000            LD DE,20    ;HORIZ LINE LENGTH
     2AB140            LD HL,(SCNAD) ;HIRES SCRN LOC
     C31441            JP DP2      ;JMP TO DISP LOOP
```

HIRES PART 2

```
410D 00        DP1   NOP          ;DELAY 4 T STATES
     00                NOP         ;DELAY 4 T STATES
     05                DEC B       ;DEC LINE COUNTER
     CA1B41            JP Z,DP3    ;IF FINISHED JUMP
     19                ADD HL,DE   ;CALC NEXT LINE

4114 7C        DP2   LD A,H       ;LOAD MSB OF NEXT
     ED47              LD I,A      ;LINE START ADDR
     7D                LD A,L      ;GET LSB READY
```

HIRES PART 3

```
4118 C38CC0                JP C08C ;JUMP TO LBUF
```

HIRES PART 4

```
411B 2A0C40    DP3   LD HL,(400C)  ;DFILE POINTER
     2A0C40          LD HL,(400C) ;DELAY 32 T-STATES
     2A0C40          LD HL,(400C) ;
     11F782          LD DE,82F7   ;LAST LINE OFFSET
     19            ADD HL,DE      ;LAST LINE ADDRESS
     3E1E            LD A,1E      ;RESTORE SINC O/S
     ED47            LD I,A       ;FONT POINTER

412C 3EF5            LD A,F5      ;SYNC O/S NEEDS A=F5
     010802          LD BC,0208   ;1 ROW/8 HIGH
     CDB502          CALL 2B5     ;CALL SYNC O/S ROM
     CD9202          CALL 292     ;ROUTINE TO DISPLAY
     CD2002          CALL 220     ;THE LAST LINE
     DD21FD40        LD IX,DPLY   ;POINT BACK THEN
     C3A402          JP 2A4       ;JUMP TO SYNC O/S
```

RETURN TO NORMAL SYNC O/S DISPLAY

```
41E0 3E1E      NORM  LD A,1E  ;LOAD FONT TABLE PNTR
     ED47            LD I,A   ;AND SET JUMP VECTOR
     DD218102        LD IX,281;TO POINT TO SYNC O/S
     C9  .           RET      ;DISPLAY ROUTINE
```

ENTRY FROM SYNC O/S

```
41E9 DD21FD40 HIRES LD IX,DPLY ;LOAD JUMP VECTOR TO
     C9             RET        ;HIRES ROUTINE
```

****

Happy New Year.

Vancouver Sinclair Users Group,
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The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of the, Microace, ZX 80, ZX 81, T/S 1000, T/S 1500, Spectrum, Spectrum+ T/S 2068 and QL computers.

Our 1985 executive consists of,

President	Marcio Vieira
V.P/Coordinator	Erik Sakara
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